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| 09/916,517 | 07/30/2001 | Tae Won Lee | 0465-0842P-SP | 9760 |

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| EXAMINER | |
|---|---|
| TRAN, TRANG U | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2614 | |

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/916,517 | LEE, TAE WON | |
| | Examiner | Art Unit | |
| | Trang U. Tran | 2614 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *01 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *19-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,14 and 15* is/are rejected.

7)☒ Claim(s) *9-13 and 16-18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed Aug. 1, 2005 have been fully considered but they are not persuasive.

In re pages 12-15, applicant argues that groups are not properly categorized as subcombinations usable together, as the examiner suggests, because Group I is an apparatus and Group II is a method, there should be no additional burden on the Examiner because the Examiner has classified the two groups in the same class, and the examiner has failed to meet the required burden of showing that the groups of claims are independent and distinct, as required by law.

In response, the examiner respectfully disagrees. First at all, even though one Group is apparatus and other Group is method, the two can be classified as subcombinations usable together. Secondly, even though they are classified in the same class, there is burden on the Examiner because they are classified in the different subclasses and the search for these Groups are different. Finally, the "independent" and "distinct" can be defined as subcombinations usable together accordance to MPEP 806.05(d).

### *Election/Restrictions*

2. Applicant's election with traverse of Group I, claims 1-18 in the reply filed on August 01, 2005 is acknowledged.

3. Claims 19-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected claims, there being no allowable generic or

linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on August 01, 2005.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 3-7 are rejected under 35 U.S.C. 102(e) as being anticipate by Shintani (US Patent No. 6,229,480 B1).

In considering claim 1, Shintani discloses all the claimed subject matter, note 1) the claimed an antenna receiving channel signals of digital television broadcasting and having a directionality dependent on a control signal is met by the antenna 122 (Fig. 2, col. 3, lines 22-34), 2) the claimed a signal processing part tuning a wanted channel signal from the channel signals and processing the tuned channel signal as a wanted form is met by the tuner 110 (Fig. 2, col. 3, lines 22-61), 3) the claimed a detection part detecting state signals of the channel signal outputted from the signal processing part is met by the demodulator 112 (Figs. 2 and 3, col. 3, lines 30-61 and col. 4, lines 36-43), 4) the claimed a memory, when every new state signal is detected, storing the detected new state signal sorted with previously-detected state signals is met by the memory 136

which stores the acceptable antenna orientation information indicative of the acceptable or optimum orientation of the antenna 122 for each channel is obtained (Fig. 2, col. 3, line 57 to col. 4, line 60), 5) the claimed a control part producing the control signal corresponding to an optimal direction of the antenna by comparing the new state signal to the previous state signals is met by the microprocessor 120 which generates an acceptable antenna orientation signal and/or generates an antenna rotator control signal (Fig. 2, col. 3, line 44 to col. 4, line 60 and col. 5, lines 31-67), and 6) the claimed an interface part providing the antenna with the control signal is met by the antenna rotator 124 (Fig. 2, col. 3, line 63 to col. 4, line 35).

In considering claim 3, Shintani discloses all the claimed subject matter, note 1) the claimed the signal processing part comprising: a tuner tuning a wanted channel signal from channel signals received through the antenna is met by the tuner 110 (Fig. 2, col. 3, lines 22-61), 2) the claimed an intermediate frequency automatic gain control part controlling automatically an intermediate frequency gain of the channel signal tuned by the tuner is met by the tuner 110 which provides tuning parameters such as automatic gain control (AGC) level information to the microprocessor (Fig. 2, col. 3, lines 22-61), and 3) the claimed a receive chip taking a signal having a wanted form from an output signal of the intermediate frequency automatic gain control part and providing the detection part with the taken signal is met by the demodulator 112 which may include a front end portion 160, an equalizer 162 and a back end portion 164 (Figs. 2 and 3, col. 3, lines 30-61 and col. 4, lines 36-43).

In considering claim 4, the claimed wherein the receive chip is a VSB receive chip for getting a VSB (vestigial side band) signal is met by the demodulator 112 may include a front end portion 160, an equalizer 162 and a back end portion 164 which received the broadcasted DTV signal (such as an 8VSB or vestigal side band signal or a digital modulation broadcast signal (Figs. 2 and 3, col. 3, lines 30-61 and col. 4, lines 36-43).

Claim 5 is rejected for the same reason as discussed in claim 1 and further the claimed a detection part attaining state signals from an output signal of the signal processing part wherein the state signals include a power of the channel signal, a power of a ghost signal, and a signal vs. noise ratio is met by the demodulator 112 which generates the information pertaining to BER, C/N, equalizer tap coefficients, AGC level, Reed-Solomon error correction code and so forth for the respective channel is obtained from the received (Figs. 2 and 3, col. 3, lines 30-61 and col. 4, lines 36-60).

In considering claim 6, the claimed the signal of the predetermined form is a VSB signal is met by the receiver 108 which received the broadcasted DTV signal (such as an 8VSB or vestigial side band signal or a digital modulation broadcast signal (Figs. 2 and 3, col. 3, lines 30-61 and col. 4, lines 36-43).

Claim 7 is rejected for the same reason as discussed in claim 3.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (US Patent No. 6,229,480 B1).

In considering claim 2, Shintani disclose all the limitations of the instant invention as discussed in claim 2 above, except for providing the claimed wherein the antenna includes a smart antenna. The capability of using the smart antenna is old and well known in the art. Therefore, the Official Notice is taken. It would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the old and well known of using the smart antenna into Shintani's system in order to increase the performance of the digital television receiver.

8. Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (US Patent No. 6,229,480 B1) in view of Kim (US Patent No. 6,049,361).

In considering claim 8, Shintani disclose all the limitations of the instant invention as discussed in claims 5-7 above, except for providing the claimed the VSB receive chip comprising: an automatic gain control part controlling a gain of an output signal of the intermediate frequency automatic gain control part; a timing and carrier restoration part restoring a timing and carrier loss on an output signal of the automatic gain control part; an equalizer equalizing an output signal of the timing and carrier restoration part; a phase tracker tracking a phase of an output signal of the equalizer; and a forward error corrector correcting a forward error on an output signal of the phase tracker and outputting the VSB signal.

Kim teaches that the HDTV according to the present invention, as show in Fig. 1, an AGC circuit 200 which provides the AGC signal to the tuner/IF demodulator discloses all the claimed subject matter, note 1) the claimed and controls the amplitude of the IF signal, a digital frequency and phase locked loop (DFPLL) circuit 106 restores a carrier wave using a pilot signal and a symbol timing restorer 110 restores symbol timing using the output signal of the match filter 108, an equalizer 118 removes multi-path noise generated when the transmitted signal passes through a transfer signal, a phase tracking loop (PTL) circuit 120 removes noises of a phase which are not removed in the DFPLL circuit 106, namely, the error of the phase, and the FEC denotes a forward error code (Figs. 1 and 2, col. 2, line 42 to col. 3, line 47).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate VSB receiver as taught by Kim into Shintani's system in order to receive and process the HDTV signal.

In considering claim 15, the claimed wherein the intermediate frequency signal and high frequency signal gains are controlled chip in accordance with an automatic gain automatically by the VSB receive control system is met by the AGC circuit 200 (Figs. 1 and 2, col. 2, line 42 to col. 3, line 47 of Kim).

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani (US Patent No. 6,229,480 B1) in view of Kim (US Patent No. 6,049,361), and further in view of Krishnamurthy et al. (US Patent No. 5,638,140).

In considering claim 14, the combination of Shintani and Kim disclose all the limitations of the instant invention as discussed in claims 5-8 above, except for providing

the claimed wherein an automatic gain control (AGC) system of the tuned channel signal controls a gain of an intermediate frequency signal through a electric charge pump & lag filter from the VSB receive chip and a gain of a high frequency signal automatically using an automatic gain control signal delayed in the intermediate frequency automatic gain control part.

Krishnamurthy et al teach that the IF signal from SAW filter 18 is applied through a gain controlled amplifier 30 to one input of an IF switch 32, the gain of amplifier 30 is controlled by an AGC control and charge pump 31, circuit 31 is responsive to Gain-up and Gain-down signals for charging and discharging a capacitor 33 to a desired value for controlling the gain of amplifier 30, circuit 31 also generates a delayed AGC signal for application to tuner 10 (Figs. 1 and 2, col. 3, lines 1-38).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the AGC control and charge pump as taught by Krishnamurthy et al into the combination of Shintani and Kim's system in order to improve the AGC system.

***Allowable Subject Matter***

10. Claims 9-13 and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tait (US Patent No. 6,697,610 B1) discloses smart antenna for RF receivers.

Bao et al. (US Patent No. 6,509,934 B1) disclose directing an antenna to receive digital television signals.

Holliday (US Patent No. 6,661,373 B1) discloses antenna alignment meter.

Jeong et al. (US Patent No. 6,334,218 B1) disclose device for receiving satellite broadcast and a receiving method therefor.

Channey et al. (US Patent No. 5,515,058) disclose antenna alignment apparatus and method utilizing the error condition of the received signal.

Fukazawa et al. (US Patent No. 5,376,941) disclose antenna direction adjusting method and apparatus for satellite broadcasting receiving system.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (571) 272-7358. The examiner can normally be reached on 8:00 AM - 5:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TT
January 5, 2006

Trang U. Tran
Examiner
Art Unit 2614